



State of Utah

Department of
Environmental Quality

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DIVISION OF AIR QUALITY
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DAQE-IN2494003-04

July 30, 2004

William Grygar
Anadarko Petroleum Corporation
17001 Northchase Drive
PO Box 1330
Houston, TX 77251-1330

Dear Mr. Grygar:

Re: Intent to Approve: Modify AO DAQE-AN2494002-03 to replace Electric Compressor with a Natural Gas Fired Compressor at Helper State CPF, Carbon County, CDS B; ATT; HAPs
Project Code: N2494-003

The attached document is the Intent to Approve (ITA) for the above-referenced project. ITAs are subject to public review. Any comments received shall be considered before an Approval Order is issued.

Future correspondence on this Intent to Approve should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. Please direct any technical questions you may have on this project to Mr. Nando Meli. He may be reached at (801) 536-4052.

Sincerely,

Rusty Ruby, Manager
New Source Review Section

RR:NМ:jc

cc: Southeastern Utah District Health Department

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

**INTENT TO APPROVE: MODIFY AO DAQE-AN2494002-03
TO REPLACE ELECTRIC COMPRESSOR WITH A
NATURAL GAS FIRED COMPRESSOR AT HELPER STATE
CPF**

Prepared By: Nando Meli, Engineer
(801) 536-4052
Email: nmeli@utah.gov

INTENT TO APPROVE NUMBER

DAQE-IN2494003-04

Date: July 30, 2004

Anadarko Petroleum Corporation

Source Contact
William Grygar
(832) 636-2656

Richard W. Sprott
Executive Secretary
Utah Air Quality Board

Abstract

Anadarko Petroleum operates a natural gas Central Production Facility (Helper State - CPF) located northeast of Price, Carbon County, on No Man Road. The source of natural gas is coal bed methane. This source collects coal bed methane from nearby wells, removing water and carbon dioxide prior to compressing the product for delivery to the natural gas-for-sale pipeline. Anadarko is requesting approval to replace one of the electric powered compressors with a natural gas powered compressor. Carbon County is an attainment area of the National Ambient Air Quality Standards (NAAQS) for all pollutants. New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP) and Maximum Available Control Technology (MACT) regulations do not apply to this source. Title V of the 1990 Clean Air Act does not apply to this source. The emissions increase, in tons per year, will be as follows: $NO_x + 23.20$, $CO + 22.30$, $VOC + 5.30$, $HAPs + 2.30$. The changes in emissions will result in the following potential to emit totals: $PM_{10} = 0.35$, $NO_x = 51.04$, $SO_2 = 0.03$, $CO = 48.49$, $VOC = 42.72$, $HAPs = 9.12$.

The Notice of Intent (NOI) for the above-referenced project has been evaluated and has been found to be consistent with the requirements of the Utah Administrative Code Rule 307 (UAC R307). Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an Approval Order (AO) by the Executive Secretary of the Utah Air Quality Board.

A 10-day public comment period will be held in accordance with UAC R307-401-4. A notice of intent to approve will be published in the Sun Advocate on August 3, 2004. During the public comment period the proposal and the evaluation of its impact on air quality will be available for both you and the public to review and comment. If anyone so requests a public hearing it will be held in accordance with UAC R307-401-4. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated.

Please review the proposed AO conditions during this period and make any comments you may have. The proposed conditions of the AO may be changed as a result of the comments received. Unless changed, the AO will be based upon the following conditions:

General Conditions:

1. This Approval Order (AO) applies to the following company:

Corporate Office Location
Anadarko Petroleum Corporation
17001 Northchase Dr.
Houston, TX 77251-1330

Phone Number: (281) 863-2607
Fax Number: (281) 863-2690

The equipment listed in this AO shall be operated at the following location:

PLANT LOCATION:

Remote location on No Man Road, within Cardinal Wash, Northeast of Price, Carbon County. (Take 800 North in Price eastward to 2100 East, turn northeast onto Deadman Creek Road and travel approximately 2.5 miles to No Man Road, turn north and travel approximately 1.0 mile to the Helper State CPF)

Universal Transverse Mercator (UTM) Coordinate System:

4,388.2 kilometers Northing, 521.2 kilometers Easting, Zone 12, UTM datum NAD27

2. All definitions, terms, abbreviations, and references used in this AO conform to those used in the Utah Administrative Code (UAC) Rule 307 (R307) and Title 40 of the Code of Federal Regulations (40 CFR). Unless noted otherwise, references cited in these AO conditions refer to those rules.
3. The limits set forth in this AO shall not be exceeded without prior approval in accordance with R307-401.
4. Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved in accordance with R307-401-1.
5. All records referenced in this AO or in applicable MACT standards, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Records shall be kept for the minimum period of two years.
6. Anadarko Petroleum Company shall install and operate the Caterpillar G3516 TALE natural gas fired compressor and shall operate the existing two electrically powered natural gas compressor engines, one existing natural gas powered compressor engine, one tri-ethylene glycol solvent dehydration unit, and one di-ethylamine solvent carbon dioxide stripping unit at its operations of the Helper State CPF in accordance with the terms and conditions of this AO, which was written pursuant to Anadarko Petroleum Corporation's Notice of Intent submitted to the Division of Air Quality (DAQ) on June 24, 2004.
7. This AO shall replace the AO (DAQE-AN2494002-03) dated September 8, 2003.
8. The approved installations shall consist of the following equipment or equivalent:
 - A. Two electrically powered natural gas compressors**

Production capacity:	6,000,000 scf/day each
	24,000,000 scf/day total
 - B. Two reciprocating internal combustion (IC) compressor engine

Manufacture:	Caterpillar
Model:	G3516 TALE
Fuel:	Natural Gas
Manufacture rated Horsepower:	1,265 derated to 1,206
Stack Height (above ground):	minimum 24 feet (modeling requirements)

- C. One natural gas fueled, Tri-ethylene glycol re-boiler
 Type of Burner: 83 ppm NO_x; 29 ppm CO
 Heating Capacity: 1,500,000 BTU/hr
 Exhaust Stack Dimensions: 14 inch diameter by 20 feet in height (modeling requirement)
 Stack flow rate: 759 acfm***
- D. One natural gas fueled, Di-ethylamine (DEA) re-boiler
 Type of Burner: 83 ppm NO_x; 29 ppm CO
 Heating Capacity: 8,500,000 BTU/hr
 Exhaust Stack Dimensions Three each at 24-inch diameter by 28.5 feet in height (modeling requirement)
 Stack flow rate: 1,434 acfm at each stack***
- E. One Emergency Natural Gas Vent Stack

* Equivalency shall be determined by the Executive Secretary.

** This equipment is listed for informational purposes only and produces no emissions.

*** This equipment specific detail is listed for informational purposes only.

9. Anadarko Petroleum Company shall notify the Executive Secretary in writing when the installation of all equipment listed in Condition #8.B has been completed and is operational, as an initial compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If installation has not been completed within eighteen months from the date of this AO, the Executive Secretary shall be notified in writing on the status of the installation. At that time, the Executive Secretary shall require documentation of the continuous installation of the operation and may revoke the AO in accordance with R307-401-11, UAC.

Limitations and Tests Procedures

10. Emissions to the atmosphere at all times from the indicated emission points shall not exceed the following rates and emission factors:

Emission Point: Stack for 1265 Hp IC Compressor Engine

<u>Pollutant</u>	<u>Mass Rate, lb/hr</u>	<u>Emission Factor, g/bhp-hr</u>
NO _x	5.3	2.0
CO	5.1	1.9

11. Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

A.	<u>Emissions Point</u>	<u>Pollutant</u>	<u>Testing Status</u>	<u>Test Frequency</u>
	1265 Hp compressor	NO _x**@
		CO*@

B. Testing Status

* Initial compliance testing is required. The initial test date shall be within 180 days after the start-up of a new emission source, or the granting of the AO for an existing emission source.

@ Test every five years using methods 10 and 7E set forth in 40 CFR 60 Appendix A or every two years using portable analyzer. If methods 10 and 7E are used, test results shall be the average of three 30-minute test runs. Volumetric flow rate shall be determined stoichiometrically.

C. Notification

The Executive Secretary shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary.

The source test protocol shall be approved by the Executive Secretary prior to performing the tests. The source test protocol shall outline the proposed test methodologies, stack to be tested and procedures to be used. A pretest conference shall be held, if directed by the Executive Secretary.

D. Sample Location

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Executive Secretary. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

E. Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2 or other testing methods approved by the Executive Secretary.

F. Nitrogen Oxides (NO_x)

40 CFR 60, Appendix A, Method 7E or other testing methods approved by the Executive Secretary.

G. Carbon Monoxide (CO)

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Executive Secretary.

H. Calculations

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission limitation.

I. New Source Operation

For a new source/emission point, the brake horsepower during all compliance testing shall be no less than 90% of the brake horsepower listed in Condition 5.A. of this AO. If the maximum AO brake horsepower has not been achieved at the time of the test, the following procedure shall be followed:

- 1) Testing shall be at no less than 90% of the brake horsepower achieved to date.
- 2) If the test is passed, the new maximum allowable brake horsepower shall be 110% of the tested achieved rate, but not more than the maximum allowable brake horsepower. This new allowable maximum brake horsepower shall remain in effect until successfully tested at a higher rate.
- 3) The owner/operator shall request a higher brake horsepower when necessary. Testing at no less than 90% of the higher rate shall be conducted. A new maximum brake horsepower (110% of the new rate) will then be allowed if the test is successful. This process may be repeated until the maximum AO brake horsepower is achieved.

J. Existing Source Operation

For an existing source/emission point, the brake horsepower during all compliance testing shall be no less than 90% of the maximum brake horsepower achieved in the previous three (3) years.

K. Internal Combustion (IC) Engines

Portable testing monitors may be used to test IC engines. If portable monitors are to be used, they shall be calibrated according to the manufacturer's recommendations prior to any test. Also, portable monitor's operation and testing time shall be in accordance with manufacturer's recommendations.

12. Visible emissions from the following emission points shall not exceed the following values:

- A. All emergency vent stacks - 0% opacity
- B. All natural gas fired compressors – 5% opacity
- C. All boiler exhaust stacks - 10% opacity
- D. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

13. The natural gas vented to the atmosphere shall not exceed 200×10^6 scf per rolling 12-month period. To determine compliance with the rolling 12-month total the owner/operator shall calculate a new 12-month total by the twentieth day of each month using data from the previous 12 months. Records of natural gas venting shall be kept for all periods when the plant is in operation. The amount of vented natural gas shall be determined by use of a flowmeter. The records of natural gas venting shall be kept on a monthly basis.

Fuels

14. The owner/operator shall use only pipeline grade natural gas as a fuel.

Records & Miscellaneous

15. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this Approval Order including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded.
16. The owner/operator shall comply with R307-107. General Requirements: Unavoidable Breakdowns.

The Executive Secretary shall be notified in writing if the company is sold or changes its name.

Under R307-150-1, the Executive Secretary may require a source to submit an emission inventory for any full or partial year on reasonable notice.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including R307.

A copy of the rules, regulations and/or attachments addressed in this AO may be obtained by contacting the Division of Air Quality. The Utah Administrative Code R307 rules used by DAQ, the Notice of Intent (NOI) guide, and other air quality documents and forms may also be obtained on the Internet at the following web site:

<http://www.airquality.utah.gov>

The annual emissions estimations below include point source and do not include fugitive emissions, fugitive dust, road dust, tail pipe emissions, and grandfathered emissions. These emissions are for the purpose of determining the applicability of Prevention of Significant Deterioration, non-attainment area, Maintenance area, and Title V source requirements of the R307. They are not to be used for determining compliance.

The Potential To Emit (PTE) emissions for the Anadarko Helper State CPF are currently calculated at the following values:

	<u>Pollutant</u>	<u>Tons/yr</u>
A.	PM ₁₀	0.35
B.	SO ₂	0.03
C.	NO _x	51.04
D.	CO	48.49
E.	VOC	42.47
F.	HAPs	
	Benzene	0.34
	Formaldehyde	4.40
	Hexane	0.20
	Xylene.....	1.98
	Total HAPs	6.82

The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an AO. An invoice will follow upon issuance of the final Approval Order.

Sincerely,

Rusty Ruby, Manager
New Source Review Section